Original article

Prescribing Pattern of Antidepressant Drugs among General Practitioners and Psychiatrists: a study from Iran

Hamid Reza Motevallyzadeh, Mohammad Reza Baneshi, Maryam Rameshk, Nouzar Nakhaee

Kerman University of Medical Sciences, Kerman, Iran

Abstract: *Aim* – This study was aimed to investigate the pattern of antidepressant drugs prescription among general practitioners and psychiatrists of Kerman/Iran with the goal of preventing irrational drug use. *Methods* – A total of 279737 prescriptions by general practitioners and psychiatrists of Kerman in 2010-2011 were reviewed. The frequency of antidepressant drugs prescription based on patients' sex and age group (10-year age groups), the prescribed drug group and the prescriber (general practitioner or psychiatrist) was assessed. *Results* - In whole, 3.1% of prescriptions included antidepressant drugs. Females` share of receiving antidepressant drugs was 63.7% and males' was 36.3%. Maximum prescription rate was for the age group of 30-39 years (28%), while the lowest rate of antidepressant drugs prescription belonged to the age groups of fewer than 10 years and over 80 years. While 59.3% of prescriptions containing antidepressant drugs had been written by psychiatrists, 68.2% of patients referred to the psychiatrists had received antidepressants. Selective serotonin re-uptake specific inhibitors (SSRIs) were included in approximately 52.6% of prescriptions containing antidepressant drugs. Tricyclic antidepressants (TCA) with 37.4% prevalence rate were in the second rank. *Conclusion* – SSRIs followed by TCAs attained the highest rate of prescription by both general practitioners and psychiatrists. Low rate of antidepressant drugs in the prescriptions of general practitioners warrants more studies.

Keywords: antidepressive agents, drug prescriptions, mental disorders

Introduction

According to the results of World Mental Health (WMH) Survey, psychiatric diseases are prevalent all around the world and among them, mood disorders and anxiety disorder are the most common ones with respectively 16% and 12% lifetime prevalence rates [1]. These diseases have several physical and social complications for the individuals' health state [2]. In developing countries, depression-related disability calculated by Sheehan Disability Scale Ratings, is not only very higher than that resulted from chronic physical diseases such as diabetes or heart disease, but also has higher severity in comparison to many mental disorders [1]. On the other hand, based on WHO estimation, in high income and middle income countries, unipolar depressive disorders will attain respectively the 1st and 2nd rank of burden of disease in 2030 [3]. In Iran, as one of the Middle East countries, depressive disorders have significant prevalence in a way that based on a nation-wide survey, 21% of individuals over 18 years had experienced depressive symptoms [4].

Medicinal treatment of patients with depression not only improves their mental health, but also increases their social performance significantly [1]. Prescription pattern of antidepressant drugs in developed countries has been frequently studied [5]. In a study covered 12 European countries, selective serotonin reuptake inhibitors (SSRIs) had been prescribed more than other antidepressants and the same pattern was seen in most developed countries [5]. Several factors affect the antidepressant drug selection, among them the specialty field of the prescriber, the severity of disease, patient preference and the studied country can be mentioned [6].

Despite the importance of prescription-based surveys in evaluation of the prescribing attitude of physicians and prevention of irrational use of drugs [7], to the authors' knowledge, in Iran there has been no study about the prescription pattern of antidepressant drugs so far. The present study aimed at exploring this issue by reviewing the prescriptions of general practitioners (GPs) and psychiatrists.

Material and Methods

In this cross-sectional study performed from 20th March 2010 to 20th March 2011 in Kerman, all prescriptions of patients covered by social security insurance that contained antidepressant drugs were surveyed. Kerman is the center of Iran largest province. It is located in southern Iran. A total number of 279,737 prescriptions written by General Practitioners and psychiatrists in Kerman were investigated. All pharmacies of Kerman city were included in the study (n=90). For data collection, census was used instead of

sample to include all pharmacies which differed. Antidepressant drugs were divided into TCA (tricyclic antidepressants), SSRIs (selective serotonin re-uptake inhibitors), NRIs (norepinephrine inhibitors), SNRIs (serotonin norepinephrine re-uptake inhibitors) and others [8]. In Iran Social Security Insurance and Medical Services Insurance are the two major medical insurance systems covering approximately 95% of the whole country population. Since Social Security Insurance covers 50% of Kerman province population from all classes of labors, rural residents and academics and since at present most of antidepressant drugs are covered by insurance services and all pharmacies in Kerman province have contract with social security insurance, the selected prescriptions can be a representative sample for studying pattern of prescribed antidepressants by general practitioners and psychiatrists for all patients in the province. So the main criteria for inclusion of prescriptions were the existence of the name of one of the antidepressant drugs in the prescription. Prescriptions of antidepressants which were prescribed by specialists other than psychiatrists, were excluded.

In order to collect a sufficient sample volume in accordance with the trend of referring cases during the year, prescriptions of the middle month of each season in the study period were selected and among them, those containing antidepressant drugs that had been prescribed by general practitioners and psychiatrists (8,862 prescriptions) were selected. Then, the prescriptions were classified based on age groups and sex and the percent of each group based on the type of the prescribed drug was calculated. Data were entered into Microsoft Excel 2007 and analyzed. The prescriptions were classified based on age and sex of patients, specialty of physician, and the drug group. The age of patients were categorized to into 10 equal groups. Chi square test was used to compare percentages between different categories. P less than 0.5 was considered as significant. Statistical analysis was done by SPSS version 20.

Results

Reviewing a total of 279,737 prescriptions showed that only 3.1% of cases (8,862 patients) referred to the general practitioners and psychiatrists have received antidepressant drugs, of whom, 63.7% were female and 36.3% were male. In whole, 3.5% of female population and 2.6% of male population had received antidepressants, which was not statistically significant (P>0.05) (*Table* 1).

As it is seen in *Figure* 1, in this study the highest rate of antidepressants prescription belongs to the age group 30-39 years (28%) followed by the age groups 20-29 years (22%) and 40-49 years (20%). Patients in the 1st, 8th and 9th decades of life had received the least rate of antidepressants (1-2%).

From all studied prescriptions, 41% was written by general practitioners and 2.75% by psychiatrists and the rest were written by other specialists. Evaluation of prescriptions written by general practitioners and psychiatrists showed that among prescriptions containing antidepressants, 41.7% had been written by general practitioners and 59.3% by psychiatrists. But considering all referred cases, just 3.1% of patients referred to the general practitioners and 68.2% of patients referred to the psychiatrists had received antidepressants (P<0.001). In whole, antidepressant drugs had been prescribed for 7.1% of patients referred to these two groups (general practitioners and psychiatrists) over a one year period (*Table* 1).

From all 8862 studied prescriptions, 6,630 ones (75%) contained one antidepressant and 2,232 ones (25%) contained more than one antidepressant. As it is seen in *Table* 2, SSRIs have the highest frequency in the prescriptions (52.6%) followed by TACs (37.4%) and the remained 10% belongs to the other groups of antidepressants.

According to the *Table* 2, in the general practitioners group, 51.4% of prescriptions contained SSRIs and 46.2% TCAs, while in psychiatrists group these two types of antidepressants account for respectively 53.3% and 31.8%.

Discussion

The present study was performed based on the data of prescriptions containing antidepressant drugs written by general practitioners and psychiatrists in outpatient sector. It was attempted to present the pattern of antidepressants prescription by two major groups prescribing these drugs.
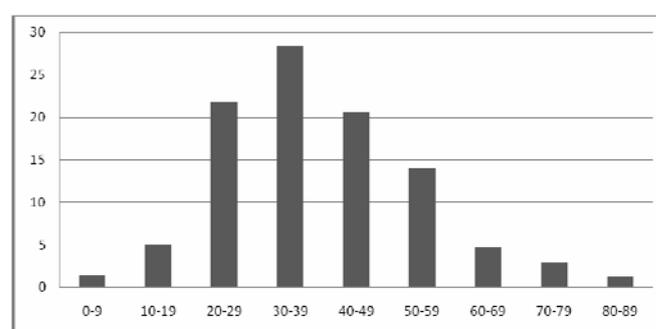

Fig. 1. Distribution of antidepressant prescription among different age groups

Table 1. Frequency of patients who received antidepressant according to gender of patient and specialty of physician

Variable	Number of visits, n (%)	Patients who received antidepressant, n (%)	P-value
Gender			
- Male	159449 (63.7)	5645 (3.5)	
- Female	120288 (36.3)	3217 (2.6)	>0.05
- Total	279737 (100)	8862 (3.1)	
Physician			
- General practitioner	115390 (40.7)	3608 (3.1)	
- Psychiatrist	7702 (59.3)	5254 (68.2)	<0.001
- Total	123092 (100)	8862 (7.1)	

Table 2. Frequency of antidepressant prescription in 8862 patients

Drug group	General Practitioners, n (%)	Psychiatrists, n (%)	Total, n (%)
TCA	2051 (46.2)	2162 (31.8)	4213 (37.4)
SSRIs	2291 (51.4)	3632 (53.3)	5923 (52.6)
SNRIs	0	33 (0.5)	33 (0.3)
NRIs	5 (0.1)	303 (4.4)	308 (2.7)
Others	191 (2.3)	687 (10.0)	792 (7.0)
Total	4452 (100)	6817 (100)	11269 (100)

TCA: Tricyclic antidepressants; SSRIs: Specific serotonine re-uptake inhibitors; SNRIs: Serotonine norepinephrine re-uptake inhibitors; NRIs: Norepinephrine inhibitors.

As it is clear from final results, from all patients referred to the two groups, just 3.1% had received antidepressant drugs. With regard to several indications of these drugs (psychiatric disorders such as dysthymia, psychosomatic diseases, gastrointestinal diseases such as irritable bowel syndrome, rheumatologic diseases like fibromyalgia, cardiovascular diseases such as panic attack, neurological disorders like non-specific pains, etc.) and on the other hand high prevalence of depression during life [1], it seems that a significant part of patients affected by depression have been deprived of medication therapy as the most important part of treatment in this disease. This finding has been emphasized in other studies too [9]. It has been asserted in the mentioned study that 40% of patients with mood disorder (like depression) received no therapeutic intervention during a 12-month period. Another study in England has also emphasized on lower rate of antidepressants prescription in comparison to what has been suggested in their clinical guide [10].

In the present study, like some other similar studies[9-11], the frequency of antidepressants prescriptions has been more in females than males (64% vs. 36%) that can be attributed to higher prevalence of depression among women [12].

In regard to the age distribution, the highest rate of antidepressants prescription (28.1%) belonged to the age group 30-39 years which is similar to the results of a study performed in Australia [9]. While in the present study, age groups of 20-29 years and 40-49 years were respectively the 2nd and 3rd groups in this regard in the Australia study, the age groups of 40-49 years was the 2nd and 20-29 was the 3rd group. Although old individuals (over 80 years) are considered among frequent receivers of antidepressants [9], in the present study the lowest rate of antidepressants prescription was in this age group. Considering high prevalence of chronic disabling diseases in this age group and special socioeconomic state of them in the society, it seems that treatment of depression or even prescription of antidepressants for the purpose of completing the treatment process of other accompanying diseases has been neglected. As it is reported in Moore et al study, only 61% of antidepressants prescriptions have been for the treatment of depression symptoms or combination of depression and anxiety [11]; therefore, more attention to the role of antidepressants is necessary.

In regard to the antidepressant prescriber, the major part of antidepressants prescriptions (59.3%) was by psychiatrists, while in a similar study general practitioners had the most share in prescription of antidepressant drugs [9]. Of course, according to the total referred cases, only 3.1% of patients referred to the general practitioners had received antidepressants and considering high rate of referring to this group (41% of outpatient visits) and high rate of depressive disorders among patients who visit the general practitioners [12], this rate of antidepressants prescription by general practitioners found in the present study is much lower compared to the results of other studies [11-13]. This can be due to the poor knowledge of general practitioners about the diagnosis and treatment of depression, insufficient follow up of patients requiring medicinal interventions, lack of knowledge or confidence among patients in regard to referring to general practitioners for the treatment of mood disorders symptoms, general practitioners' neglect in regard to providing the required comments about proper use, side effects and duration of taking antidepressants and finally lack of a referral system resulting in referring directly to psychiatrists.

In relation to the pharmacologic group, like most other studies [9, 11, 13], SSRIs had the most share among other antidepressants (53%). In a study performed in England, in 62% of cases TCAs and in 38% of cases SSRIs were the first prescribed drugs. But in continuation of treatment process, the chance of receiving adequate dose and duration for treatment in SSRIs was 7 times more than that for TCAs. Anyway, less side effects (orthostatic hypotension, drowsiness, cholinergic symptoms), lower probability of toxicity, lower cost, insurance coverage and the same efficacy are among probable reasons for this prescription preference [14].

As the results of the present study show, in whole novel antidepressant drugs (SSRIs, SNRIs, NRIs, etc.) account for 62.6% of all antidepressant prescriptions in comparison to traditional drugs (TCAs) with just 37.4% of prescribing rate. This finding is similar to the reported rates of 77% in East Asia [13], 58% in Australia [9] and 50% in England [11].

In the present study, approximately 75% of prescriptions (6620 ones) contained one antidepressant and the remained 25% (2232) contained more than one. In a similar study in East Asia the corresponding values have been respectively 85.9% and 13.1% [13]; this shows more tendency of our physicians for prescribing more than one antidepressant in each visit.

There is one limitation that need to be acknowledged. Since in prescriptions there was no item regarding the patient diagnosis and social status, we could not examine the relationship of these variables with pattern of antidepressant prescriptions.

Conclusion

In whole, considering high prevalence of depression in the society and several indications of antidepressants prescription, the percent of prescriptions with at least one antidepressant written by general practitioners was less than what expected. SSRIs followed by TCAs had the highest rate of being prescribed by both general practitioners and psychiatrists; even though among psychiatrists the difference between the rates of SSRIs and TCAs prescription was more compared to the general practitioners. More studies are required to find the reason of prescribing antidepressant drugs and also duration of their consumption by patients.

Conflict of interest: none declared.

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Authors:

Hamid Reza Motevallyzadeh – MD, MPH, Researcher, Research Center for Health Services Management, Kerman University of Medical Sciences, Kerman, Iran;

Mohammad Reza Baneshi – PhD, Assistant Professor, Research Center for Modelling in Health, Kerman University of Medical Sciences, Kerman, Iran;

Maryam Rameshk – Pharm.D., PhD student, Research Center for Social Determinants of Health, Kerman University of Medical Sciences, Kerman, Iran;

Nouzar Nakhaee – MD, Professor, Neuroscience Research Center, Kerman University of Medical Sciences, Kerman, Iran.